

## **DETAILED ACTION**

### ***Reissue Applications***

1. Claims 31, 32 and 34 are rejected under 35 U.S.C. 251 as being based upon new matter added to the patent for which reissue is sought. The added material which is not supported by the prior patent is as follows:

The claimed “said calcining reactor being uninsulated internally thereof along said calcining zone” is deemed to be new matter not supported by the originally filed specification. Nowhere in the specification does the applicant describe the calcining reactor being uninsulated internally thereof along said calcining zone”. The alleged support in the original specification col. 6, lines 12-13, failed to specify “said calcining reactor being uninsulated internally thereof along said calcining zone”. Col. 6, lines 12-13 stated that “This arrangement also avoids the need for expensive refractory material to insulate the equipment.” This sentence does not support the claimed “said calcining reactor being uninsulated internally thereof along said calcining zone”.

2. The reissue oath/declaration filed with this application is defective (see 37 CFR 1.175 and MPEP § 1414) because of the following: the amendments filed 6/19/07 and 4/17/08 are not supported by a supplemental reissue oath/declaration. A new supplemental reissue oath/declaration is required to cover the amendments of 6/19/07 and 4/17/08. The difference between the canceled original claims 1-18 and the new claims 31, 32, 34 must be pointed out (MPEP 1414). The reissue oaths/declarations filed

Art Unit: 3749

12/13/06 and 6/14/08 are defective and fail to contain an error (37 CFR 1.175). A new reissue oath/declaration is required.

3. Claims 31, 32 and 34 are rejected as being based upon a defective reissue declaration under 35 U.S.C. 251 as set forth above. See 37 CFR 1.175.

The nature of the defect(s) in the declaration is set forth in the discussion above in this Office action.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 31, 32, 34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed peripheral wall in the calcination zone “said calcining reactor being uninsulated internally thereof along said calcining zone” is deemed to be new matter not supported by the originally filed specification. Nowhere in the specification does the applicant describe the newly added “said calcining reactor being uninsulated internally thereof along said calcining zone”. The alleged support in the original specification col. 6, lines 12-13, 19-27, failed to specify the arrangement of “said calcining reactor being uninsulated internally thereof along said calcining zone”. Therefore, col. 6, lines 12-13 and 19-27 are insufficient to show full

Art Unit: 3749

support of the newly added limitations. The applicant must point out each and every word in the broad claim 31 where the support can be found in the original specification. In particular, the last two lines of the broad claim 31, the applicant must point out from the specification where “said calcining reactor being uninsulated internally thereof along said calcining zone” is. The words “said calcining reactor being uninsulated internally thereof along said calcining zone” are simply not found in the original drawings or in the specification. Please explain where in the specification shows “said calcining reactor being uninsulated internally thereof along said calcining zone”.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 31, 32 and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The newly claimed limitation “said calcining reactor being uninsulated internally thereof along said calcining zone” in claim 31 is a negative limitation that rendered the claims indefinite because it was an attempt to claim the invention by excluding what the inventors did not invent rather than distinctly and particularly pointing out what they did invent. In re Schechter, 205 F.2d 185, 98 USPQ 144 (CCPA 1953). The specification fails to explain what “said calcining reactor being uninsulated internally thereof along said calcining zone” is. Nowhere in the specification does the applicant describe “said calcining reactor being uninsulated internally thereof along said calcining zone”. Moreover, the words “said calcining reactor being uninsulated internally thereof along said calcining zone” are also indefinite in this case because it is not understood what

Art Unit: 3749

“uninsulated” is. Normally, refractory material would serve as insulation in the heating art. The refractory material also would be considered as “uninsulated” to certain degree. On page 8 of the Remarks of July 6, 2006, the applicant argued that the peripheral walls of the calcinations zone in the prior art references are completely lined with refractory insulation. If the refractory insulation in the prior art references were to be removed or eliminated, then, it will result in significant damage to the reactor. Here, the broad claim 31 contains language “said calcining reactor being uninsulated internally thereof along said calcining zone” which one may infer the claimed structure is intended to damage the reactor. In the final rejection of 9/22/06, the examiner asked if this is correct. The applicant’s answer was affirmative. The applicant further stated at the bottom of page 11 to top of page 12 of the Remark of 12/13/06, that the applicant has successfully operated “said calcining reactor being uninsulated internally thereof along said calcining zone”. The question becomes why in this broadly claimed structure in claim 31, the applicant's alleged successful operation would not damage the reactor.

***Claim Rejections - 35 USC § 102/103***

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
9. Claims 31, 32 and 34 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Makris et al (U. S. Pat. 5,713,734).

Claims are structurally met by the Makris et al. Makris et al disclose a calcination plant for a particulate material same as the applicant’s. The plant also includes a calcination zone or cyclone separator 4, burner means 20, 30 for generating hot combustion gases and a calcining

Art Unit: 3749

temperature of at least 1700<sup>0</sup>F in or within in the region of the calcinations zone and means 27 for producing a swirling flow of particulate material around said region and a gradual blending of the particulate material with the hot combustion gases and transporting particulate material through at least part of the calcinations zone along a substantially cyclone path. The peripheral wall at the calcinations zone of Makris et al. is “uninsulated internally along the calcining zone”.

It is noted that Makris et al. do not expressly state in the specification that the refractory insulation is used. The claim is directed to an absence of an element, e.g. no insulation.

Therefore, Makris patent does structurally read on the broad claim 31. Or in the alternative, it is deemed to be an obvious matter to reduce the use of refractory insulation along the calcining zone or a part of the peripheral wall of the cyclone separator in order to increase the heat conduction during heating and save cost as pointed out in the applicant’s argument. Moreover, even if the calcinations plant of Makris et al. uses refractory insulation, it would have been obvious to one having ordinary skill in the art at the time the invention was made to uninsulate or eliminate the substantially amount of refractory material and its function from Makris et al.’s calcinations plant in order to save cost, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art. Ex parte Wu, 10 USPQ 2031; In re Larson, 340 F 2d 965, 144 USPQ 347 (CCPA 1965) and In re Kuhle, 526 F 2d. 553, 188 USPQ 7 (CCPA 1975). On page 8 of the Remarks of July 6, 2006, the applicant argued that the peripheral walls of the calcinations zone in the prior art references are completely lined with refractory insulation. If the refractory insulation in the prior art references were to be removed or eliminated, then, it will result in significant damage to the reactor. Here, the broad claim 31 contains language

Art Unit: 3749

“uninsulated internally thereof along the calcining zone” which one may infer the claimed structure is intended to damage the reactor. In the final rejection of 9/22/06, the examiner asked if this is correct. The applicant’s answer was affirmative. The applicant further stated at the bottom of page 11 to top of page 12 of the Remark of 12/13/06, that the applicant has successfully operated the reactor a high temperature with the peripheral wall substantially free of refractory insulation. The question becomes why in this broadly claimed structure in claim 31, the applicant's alleged successful operation would not damage the reactor. For claim 32, it is deemed to be inherent function of heating process. Whenever, the rate of retention of the particulate materials changes, the dissipation of heat also changes the temperature in the calcinations zone. This is a natural phenomenon.

10. Claims 31, 32 and 34 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nishida et al (U. S. Pat. 3,881,862).

Nishida et al. disclose a calcination plant for a particulate material same as the applicant’s. The plant also includes a calcination zone or cyclone separator 11, burner means 8, 14 for generating a temperature of at least 1700<sup>0</sup>F in the calcinations zone and means 3D for producing a swirling flow of particulate material around said region and a gradual blending of the particulate material with the hot combustion gases and for transporting particulate material through at least part of the calcinations zone along a substantially cyclone path. The peripheral wall at the calcinations zone of Nishida et al. is uninsulated internally thereof along said calcining zone. It is noted that Nishida et al do not expressly stated in the specification that no insulation is used. The broad claim 31 is directed to an absence of an element, e.g. no insulation. Therefore, Nishida et al patent does structurally read on the broad claim 31. Or in the

Art Unit: 3749

alternative, it is deemed to be an obvious matter to uninsulate or reduce the use of refractory insulation along the calcining zone in order to increase the heat conduction during heating and save cost. Moreover, even if the calcinations plant of Nishida et al. uses refractory insulation, it would have been obvious to one having ordinary skill in the art at the time the invention was made to eliminate the insulation refractory material and its function from Nishida et al.'s calcinations plant in order to save cost, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art. Ex parte Wu, 10 USPQ 2031; In re Larson, 340 F 2d 965, 144 USPQ 347 (CCPA 1965) and In re Kuhle, 526 F 2d. 553, 188 USPQ 7 (CCPA 1975). On page 8 of the Remarks of July 6, 2006, the applicant argued that the peripheral walls of the calcinations zone in the prior art references are completely lined with refractory insulation. If the refractory insulation in the prior art references were to be removed or eliminated, then, it will result in significant damage to the reactor. Here, the broad claim 31 contains language "uninsulated internally thereof along the calcining zone" which one may infer the claimed structure is intended to damage the reactor. In the final rejection of 9/22/06, the examiner asked if this is correct. The applicant's answer was affirmative. The applicant further stated at the bottom of page 11 to top of page 12 of the Remark of 12/13/06, that the applicant has successfully operated the reactor a high temperature with the peripheral wall substantially free of refractory insulation. For claim 32, it is deemed to be inherent function of heating process. Whenever, the rate of retention of the particulate materials changes, the heat dissipation will change the temperature in the calcinations zone. This is a natural phenomenon.

***Response to Arguments***

11. Applicant's arguments filed 6/19/07 and 4/17/08 have been fully considered but they are not persuasive to overcome the rejection. First broad claims fail to structurally define over the prior art references. Please point out from the claims if any structural limitations that the prior art references do not show or teach. Second, on pages 4-5 of the Remark of 4/17/08, the applicant argued that the col. 6, lines 12-13 shows the support of the broad claim language in claim 31 ““said calcining reactor being uninsulated internally thereof along said calcining zone””. The examiner disagrees. The specification in col. 6, lines 12-13, simply is insufficient to show full support of the newly added limitations. Col. 6, lines 12-13 only mentions something about to avoid the need for expansive refractory material to insulate the equipment”. There are many types of equipment in the patent, e.g. cyclones 20, fan 52, nozzles 49, etc. Col. 6 does not expressly or impliedly require “said calcining reactor being uninsulated internally thereof along said calcining zone” The applicant attempted to interpret that “This arrangement also avoids the need for expensive refractory material to insulate the equipment” supports the newly added limitation of “said calcining reactor being uninsulated internally thereof along said calcining zone”. The examiner simply disagrees with such stretch of the interpretation of the language as used in Col. 6, lines 12-13. Therefore, the examiner maintains that the newly added limitation in the last three lines of claim 31 constitutes new matter not supported by the originally filed specification. Finally, the examiner has difficulty to determine exactly what the applicant is trying to claim as “uninsulated internally thereof along the calcining zone” which resulted in this 112, 2<sup>nd</sup> Paragraph, rejection. Lastly, the applicant argued that neither Markris nor Nishida indicates that the reactors are internally uninsulated along the calcining zone because they prior



Art Unit: 3749

art references operate in accordance with standard practices. The examiner disagrees because it is well settled that to eliminate an element and its function is deemed to be obvious in absence of any new or unexpected result. In this case, it is clear to eliminate the insulation, if any, along the internally along the calcining zone and its insulating function would have been obvious in order to increase the heat conduction during heating and save cost. On this note, the last amendment OF 12/13/06, the applicant attempted to add the limitation regarding “the peripheral wall being *substantially free* (emphasis added) from refractory insulation along part of the calcinations zone”. Now, the amendment of 4/17/08, the applicant attempts to add the limitation regarding “said calcining reactor being uninsulated internally thereof along said calcining zone”. This is a clearly indication and one may infer that the applicant still believes some insulation of the standard practices is substantially acceptable. Now, the examiner wants to know exactly what the invention is. The examiner has carefully considered the affidavit of John D. MacFadyen filed on 6/14/07, but the affidavit fails to overcome the rejection. The affidavit fails to include test data to support the conclusion as stated in the affidavit. Paragraph 10, the affiant stated that the swirling flow of the particulate material causes the temperature of the calcining reactor to remain below the melting point of the reactor and prevents distortion or dysfunction. This may be partially true but however, the affiant fails to take into account of the heat dissipation rate, heat input rate by burner, residence time of the particulate material, temperature of incoming particulate material and the rate of charge and discharge of particulate material. The affiant can not simply pick and choose the factors desired. Paragraph 12, the affiant stated that the lack of insulation along the internal calcining zone is novel in the industry. However, this was not recognized until after the original patent was issued. In other words, the applicant did not have

Art Unit: 3749

possession of the alleged novelty until the original patent was issued. This is not a 35 USC 251 error. A reissue application can not based the “invention” not recognized or in possession at the time of issuance of the original patent. Furthermore, the added limitation “said calcining reactor being uninsulated internally thereof along said calcining zone” still deems to be new matter not supported by the original patent (see 112 rejection above).

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jiping Lu whose telephone number is 571 272 4878. The examiner can normally be reached on Monday-Friday, 9:00 AM - 5:30 PM.

Art Unit: 3749

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, STEVEN B. MCALLISTER can be reached on 571 272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jiping Lu/  
Primary Examiner  
Art Unit 3749

J. L.